

What is claimed is:

- 5 ~~1.~~ A method of sanitizing a food product,
comprising
applying an aqueous sanitizing liquid onto the
food product by spraying it onto all exterior surfaces
of the food product from a plurality of directions
while moving the food product laterally with respect to
10 the sprays, wherein the velocity of each spray is
sufficient to wet microbes adhered to the surface of
the food product,
wherein the sanitizing liquid comprises ozone at a
concentration of up to 15 ppm,
15 maintaining contact between said sanitizing liquid
and said food product for at least a time effective to
maximize wetting of the surface of the food product by
the sanitizing liquid containing said at least one
agent,
20 and then removing mechanically at least 75% of
said liquid from said food product.
2. A method according to claim 1 wherein the
food product is moved on a conveyor between sprays
25 located above and below said conveyor.
3. A method according to claim 1 wherein the
sanitizing liquid also comprises a surfactant in an
amount which is physiologically nontoxic.
30
4. A method according to claim 1 wherein said
liquid is removed mechanically from said food product

09761707-011801

by one or more of spinning, shaking, vacuum removing, or subjecting the food product to the action of an air knife.

5 5. A method according to claim 1 wherein after the step in which at least 75% of said sanitizing liquid is removed from the food product, the food product is passed through an aqueous mist which comprises a preserving agent.

10 6. A method according to claim 1 wherein sanitizing liquid removed from said food product is recycled and applied to additional food product.

15 7. A method according to claim 1 wherein said sanitizing liquid also comprises at least one agent which inactivates food microbes wherein said agent is present in a concentration sufficient to inactivate food microbes.

20 8. A method for increasing the shelf life of a food product comprising introducing an aqueous solution of ozone into interstices of the food product and then removing mechanically at least 75% of the water in said
25 interstices, wherein the ozone concentration of said solution is sufficient to permit said removal of at least 75% of said water.

30 9. A method of prolonging the appearance of freshness of a food product which is a vegetable or fruit, comprising

09761707 011804

cont
15 applying an aqueous sanitizing liquid onto the food product by spraying it onto all exterior surfaces of the food product from a plurality of directions while moving the food product laterally with respect to the sprays, wherein the velocity of each spray is sufficient to wet microbes adhered to the surface of the food product,

wherein the sanitizing liquid comprises ozone at a concentration of up to 15 ppm,

10 maintaining contact between said sanitizing liquid and said food product for at least a time effective to maximize wetting of the surface of the food product by the sanitizing liquid containing said at least one agent,

15 and then removing mechanically at least 75% of said liquid from said food product.

20 10. A method according to claim 9 wherein the food product is moved on a conveyor between sprays located above and below said conveyor.

25 11. A method according to claim 9 wherein the sanitizing liquid also comprises a physiologically nontoxic surfactant.

12. A method according to claim 9 wherein said liquid is removed mechanically from said food product by one or more of spinning, shaking, vacuum removing, or subjecting the food product to the action of an air
30 knife.

09761707-011801

13. A method according to claim 9 wherein after
the step in which at least 75% of said sanitizing
liquid is removed from the food product, the food
product is passed through an aqueous mist which
5 comprises a preserving agent.

14. A method according to claim 9 wherein
sanitizing liquid removed from said food product is
recycled and applied to additional food product.

10

15. A method according to claim 9 wherein said
sanitizing liquid also comprises at least one agent
which inactivates food microbes wherein said agent is
present in a concentration sufficient to inactivate
15 food microbes.

16. A method according to claim 1 further
comprising removing liquid from said food product by
positioning beneath the food product a device
20 comprising

a main conduit oriented vertically and open
at its upper and lower ends, and preferably having at
its upper end an annular flange terminating in a planar
top surface,

25 an air knife means sealingly connected to an
opening in the side of said main conduit and positioned
in said opening to eject air or other gas downward in
said main conduit, wherein the inside diameter of the
main conduit between said opening and said upper end is
30 less than the inside diameter of the main conduit below
said opening,

09761707 "011801

Conf.
B1
wherein the portion of the main conduit downstream
of said opening, beginning from said opening, exhibits
an expansion angle of up to 3 degrees for a distance at
least 6 times the diameter of the main conduit at said
5 connection, and

gas supply means in fluid communication with the
inlet of said air knife means for blowing gas into said
inlet at a velocity sufficient that said gas is ejected
into said main conduit at a sufficient velocity to draw
10 air and any liquid entrained in the air into said upper
end and out said lower end,
and actuating said gas supply means so as to draw
liquid off of food product positioned over said device.

15 17. A method according to claim 16 wherein said
expansion angle is at least 0.5 degree.

18. A device useful in removing liquid from a
product, comprising

20 a main conduit oriented vertically and open
at its upper and lower ends, and preferably having at
its upper end an annular flange terminating in a planar
top surface,

an air knife means sealingly connected to an
25 opening in the side of said main conduit and positioned
in said opening to eject air or other gas downward in
said main conduit, wherein the inside diameter of the
main conduit between said opening and said upper end is
less than the inside diameter of the main conduit below
30 said opening,

wherein the portion of the main conduit downstream
of said opening, beginning from said opening, exhibits

09761707.011801

an expansion angle of up to 3 degrees for a distance at least 6 times the diameter of the main conduit at said connection, and

gas supply means in fluid communication with the
5 inlet of said air knife means for blowing gas into said inlet at a velocity sufficient that said gas is ejected into said main conduit at a sufficient velocity to draw air and any liquid entrained in the air into said upper end and out said lower end.

10

19. A device according to claim¹⁸ wherein said expansion angle is at least 0.5 degree.

09764707 011801